



# **Environmental Restoration Contractor/Bechtel Hanford, Inc.**

**Report from the DOE  
Voluntary Protection Program  
Onsite Review, June 21-24, 2004**



**U.S. Department of Energy**  
Office of Environment, Safety and Health  
Office of Corporate Performance Assessment  
Office of Quality Assurance Programs  
Washington, D.C. 20585

**July 2004**



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## Abbreviations and Acronyms

<b>ALARA</b>	As Low as Reasonably Achievable
<b>BHI</b>	Bechtel Hanford, Inc.
<b>CAR</b>	Corrective Action Request
<b>CATS</b>	Corrective Action Tracking System
<b>DOE</b>	U.S. Department of Energy
<b>EJTA</b>	Employee Job Task Analysis
<b>ERC</b>	Environmental Restoration Contractor
<b>ERDF</b>	Environmental Restoration Disposal Facility
<b>ES&amp;H</b>	Environment, Safety and Health
<b>HAMTC</b>	Hanford Atomic Metal Trades Council
<b>HASP</b>	Health and Safety Plan
<b>HAZWOPER</b>	Hazardous Waste Operations and Emergency Response
<b>HGET</b>	Hanford General Employee Training
<b>ISMS</b>	Integrated Safety Management System
<b>JHA</b>	Job Hazard Analysis
<b>MSDS</b>	Material Safety Data Sheet
<b>OJT</b>	On-the-Job Training
<b>ORPS</b>	Occurrence Reporting and Processing System
<b>OSHA</b>	Occupational Safety and Health Administration
<b>POD</b>	Plan of the Day
<b>PM</b>	Preventive Maintenance
<b>PPE</b>	Personal Protective Equipment
<b>RadCon</b>	Radiological Control
<b>RWP</b>	Radiological Work Permit
<b>S&amp;H</b>	Safety and Health
<b>SSHASP</b>	Site-Specific Health and Safety Plan
<b>STR</b>	Subcontractor Technical Representative
<b>TSA</b>	Task Safety Analysis
<b>TPD</b>	Training Position Description
<b>TRIS</b>	Training Records Information System
<b>VPP</b>	Voluntary Protection Program



## Executive Summary

The Department of Energy Voluntary Protection Program (DOE-VPP) onsite review of the Environmental Restoration Contractor (ERC) was conducted from June 21- 24, 2004 at Richland, WA. Bechtel Hanford, Inc. (BHI), assisted by two pre-selected subcontractors, Eberline Services Hanford, Inc. and CH2M HILL Hanford, Inc., is the primary environmental restoration contractor for the Department of Energy (DOE) at the Hanford site. The following summarizes the review team's observations and analysis.

### ***Management Leadership***

The DOE-VPP Onsite Review Team (Team) found a high degree of management commitment to safety and health (S&H) at the ERC. The leadership is capable, competent and well directed. The team found visible leadership, fully executed at the top and in the field. The President of BHI and other managers at the ERC actively participate in safety programs and have successfully established an organization to implement the Integrated Safety Management System (ISMS) and the Voluntary Protection Program (VPP). ERC management believes that all accidents are preventable and encourages a safety culture based on an "injury-free workplace." VPP is considered a method to measure the success of ISMS with the view that they complement each other.

#### **GOAL**

**ERC Managers will extend their commitment to a STAR level of quality VPP by establishing a more robust safety and health partnership with all ERC employees.**

**Management will improve workplace safety and health ownership by both bargaining unit employees and other employees. Management will establish the necessary committees, procedures, and communications to exercise and continuously enhance employee safety program ownership.**

**Sufficient ownership will be measured by the degree of employee empowerment and integration of employee influence into the operation of the workplace safety and health program.**

### ***Employee Involvement***

Employees at ERC are committed to their work, their company, and the safety of their coworkers. They are mature, well seasoned and competent. The team found that the workers at ERC are cooperative and cognizant of the hazards existing at the site. However, the team assessed that additional empowerment and ownership by workers is needed to make VPP more effective. The multiple short-term extensions of the BHI contract by DOE have made it difficult for employees at ERC to keep stay focused on their work and their responsibility for safety.

All ERC employees understand that they have the “StopWork” authority if unsafe conditions exist. They have no fear of reprisal, although there seems to some confusion due to various levels of management by subcontractors and sub-tier subcontractors. The review team observed a number of noteworthy practices such as the stretching program, the Hanford Atomic Metal Trades Council (HAMTC) safety representative program, employee recognition awards, and the on the job training (OJT) program.

#### **GOAL**

**Employees will assume an active role in the planning, execution and assessment portions of the ERC workplace safety and health programs.**

**Employees will participate in the development, implementation, monitoring, and evaluation, and recommend necessary enhancements to all the VPP elements as the owners of the ERC safety and health program.**

**Employees will share accountability for safety and healthy work performance with management.**

### ***Worksite Analysis***

The VPP on site review team found that the ERC satisfies the requirements of DOE-VPP worksite analysis criteria. Work site analysis processes are structured and implemented to control hazards to the workers, environment, and public. Hazard analysis processes incorporate tools such as the Site Specific Health and Safety Plan system (SSHASP) system and Job Hazard Analysis (JHA), and involve walkthroughs by engineers, S&H professionals, and subject matter experts to assure safe work planning prior to conducting a job. S&H professionals complete a comprehensive baseline hazards analysis for all facilities. Accident investigation and lessons learned processes are developed and implemented. The site has established trending of injury and non-injury safety and health data; the results are used for continuous improvement action development, and are communicated to employees. ERC management developed a corrective action system to identify, track and trend the safety issues. These are documented in the “Corrective Action Request” (CAR) forms, Occurrence Reporting Process System (ORPS) reports, and several other procedures described in BHI-MA-02.

### ***Hazard Prevention and Control***

ERC has a well-qualified group of S&H professionals including Certified Safety Professionals, Certified Industrial Hygienists, Certified Hazardous Materials Managers, Certified Health Physicists, and Radiological Control Technicians with certification through the national Registry of Radiation Protection and Occupational Physicians. The S&H Rules, work practices, and usage of personal protective equipment (PPE) were found to meet the requirements of VPP. Preventive maintenance programs performed by Field Support personnel with involvement of workers are effectively used to mitigate the chances of unplanned equipment failure, thereby enhancing safe operations at ERC. The site has a strong emergency preparedness program and the radiological program complies with 10 CFR 835 requirements. Medical services to ERC employees are provided by a new contractor, AdvanceMed Hanford, a group

conducting annual physical exams and utilizing the Employee Job Task Analysis (EJTA) for each worker. The Subcontractor Technical Representatives (STRs) play a significant role in the oversight of subcontractor workers. Tools such as the SSHASP, Task Instruction, Plan of the Day (POD) meetings, and the Task Safety Awareness Card are used by ERC for Hazard Prevention and Control.

### ***Safety and Health Training***

Employees at ERC are allowed to conduct OJT and appeared to be well trained to perform their work. The ERC Basic Training Cards provide current status of their training requirements and indicate that the employees interviewed have successfully completed their training. The type of training required is determined by both formal and informal processes. The Training Records Information System (TRIS) provides the list of courses offered by ERC and tracks the courses completed by workers. The ERC supervisors and managers are also required to take courses in safety and health in addition to Safety Leadership Training. The Team found that ERC satisfies the requirements of DOE-VPP concerning this tenet and its sub-elements.

### ***Conclusion***

The Team concludes that ERC/BHI has satisfied the requirements for participation in DOE-VPP and recommends that DOE approve MERIT status at this time and upgrade it to STAR after successful completion of the improvement opportunities and accomplishment of the goals specified in this report.



## I. Introduction

The DOE-VPP onsite review of the Environmental Restoration Contractor (ERC) was conducted during June 21-24, 2004, in Richland, WA. Bechtel Hanford, Inc. (BHI) is the prime environmental restoration contractor for DOE at the Hanford Site. The Department of Energy's Richland Operations Office provides guidance to ERC on a regular basis and has oversight responsibility. BHI is supported by two major pre-selected subcontractors, Eberline Services Hanford, Inc., and CH2M HILL Hanford Inc., as well as by several other smaller subcontractors such as Tetra Tech, FW Inc., RCI Environmental, Inc., Duratek Federal Services, Envirocon, Inc., Federal Engineers and Constructors, and Shamrock Constructors. It should be noted that this CH2M HILL Hanford, Inc. is not the same organization supporting the Office of River Protection at Hanford, even though they have similar names. CH2M HILL Hanford, Inc. assists in waste sampling and characterization. Eberline Services Hanford, Inc. provides expertise in Radiological Control and Health Physics.

ERC has been in operation at Richland for the past ten years; however their contract has been going through an uncertain period in recent times. The Department of Energy has been extending the BHI contract on a monthly or quarterly basis since June 30, 2002. This uncertainty may have a negative impact on the employee morale leading to loss of valuable expertise at ERC. It is commendable that BHI has applied for VPP recognition under such circumstances. At the present time, approximately 616 employees work at ERC including 130 subcontractor employees. The employees of ERC are frequently identified as manual, non-manual, bargaining or non-bargaining employees. Approximately ten subcontractor companies are involved in this project assisting the ERC. Labor unions such as HAMTC and the Building Trades Group are available to provide support to ERC management in implementing the safety programs such as VPP.

The type of work performed by ERC and its subcontractors is some of the most hazardous in the entire DOE complex. It involves excavation using heavy equipment, safe disposal of radiological and chemically contaminated waste, transportation of such material, and cocooning various production nuclear reactors built during the cold war. ERC's mission is dangerous and extremely difficult. The accelerated cleanup schedule and the incentivized performance goals attached to the BHI contract may indirectly increase the risks to workers due to inaccurate decisions made by the line managers or the Task Leaders at the work site. The potential for hazards are high due to the existence of legacy substances such as mercury, beryllium, lead and asbestos, in addition to extreme heat stress, especially affecting the workers wearing personal protective equipment (PPE). The scope of the ERC project involves mainly cocooning the Reactors at the 100 Area of the Hanford site and transporting the waste material to Environmental Restoration Disposal Facility (ERDF) at 200 West Area. In addition to natural hazards such as fire, strong winds, and hot weather, workers at ERC face "unknown hazards" due to the aging facilities containing legacy materials and radiation.

The VPP application submitted by the ERC encompasses all work conducted by BHI and its subcontractors. Availability of electronic references in the application provided an abundance of records and information. The electronic links within the application provided easy access to information concerning the safety programs at the ERC.

The Team evaluated the safety programs of the ERC against the requirements of the U.S. DOE-VPP. The DOE-VPP onsite review Team consisted of safety professionals from DOE Headquarters, DOE-Richland Operations Office, a VPP manager from the Occupational Safety and Health Administration (OSHA) Region 10 (Seattle, WA), two HAMTC employees and four other safety professionals from Richland, Washington. (See Appendix for a roster of the Team and the areas of assigned responsibilities of the

team members). During the site visit, the Team evaluated relevant safety documents and conducted formal and informal interviews to evaluate and verify the information submitted by the ERC VPP application.

## II. Injury and Illness Data Assessment

A review of the OSHA 200/300 logs was made. The rates below include contractor and sub-tier subcontractor hours and injuries:

### Injury Incident Rate

Year	Contractor	Sub-Tier Subcontractors
<b>2001</b>		
Work hours	1,722,373	278,059
Recordable cases	17	5
Incident rate	1.97	3.60
<b>2002</b>		
Work hours	1,498,944	284,740
Recordable cases	12	3
Incident rate	1.60	2.11
<b>2003</b>		
Work hours	1,032,126	189,384
Recordable cases	7	1
Incident rate	1.36	1.06
<b>Average Incident Rate</b>	<b>1.64</b>	<b>2.26</b>

## Lost Workday Injury Case Rate

Year	Contractor	Sub-Tier Subcontractors
<b>2001</b>		
Work hours	1,722,373	278,059
Lost workday cases	4	1
Incident rate	.46	.72
<b>2002</b>		
Work hours	1,498,944	284,740
Lost workday cases	3	0
Incident rate	.40	0
<b>2003</b>		
Work hours	1,032,126	189,384
Lost workday cases	3	0
Incident rate	.58	0
<b>Average Incident Rate</b>	<b>.48</b>	<b>.24</b>

The above injury-illness rates of ERC are significantly below private industry, SIC 495, rates.

The information on the OSHA 300 logs support the information provided in the application and the organization's first report of injury forms supports the data in the logs.

A health and safety professional is responsible for the entries to the OSHA 300 log and verifies the accuracy of the records. The person understands the record keeping requirements including the changes that went into effect in January 2002.

The organization requires all sub-contractors to maintain logs. Trending and analysis is conducted by BHI using the specialized databases maintained by BHI.

### **III. Management Leadership**

The Team found that ERC management leadership at this site meets the criteria of the DOE-VPP management leadership tenet. The sub-elements of this tenet and an evaluation of ERC's performance in these areas are addressed and described below.

#### **A. VPP Commitment**

Management support and commitment are critical to the successful implementation of the DOE-VPP. ERC management implement a number of well-integrated safety management systems, drawing on the guidance and support of its parent company, Bechtel. These systems work together to ensure that all work is managed, and all potentially hazardous situations are identified and mitigated. This level of commitment is reflected in continuous immediate accessibility of all managers to the principle work areas of the site. The employees indicated that they were generally able to communicate with their managers for any safety issue and gain immediate action for their concerns. Likewise, most safety issues are resolved at the lowest working level as they arise, with an understood full management endorsement.

The vision statement of ERC is to conduct work without incident, injury, or illness, and the company has established two primary goals for FY 2004 to achieve that mission and vision. These goals are to obtain 100% participation by management and employees in the VPP Committee meetings, and continue to improve upon the previous injury-illness records. Approximately six VPP teams are formed within ERC: Services, Remedial Action, Waste Operations, Nomads, Facilities and Decommissioning, and Non-field Safety and Health. These six teams have each developed individual goals and objectives.

Management's involvement, participation, and visibility in safety are evidenced by their endorsement of manager and worker participation workplace safety activities. These activities include participation by managers in the VPP Leadership Council and other safety committees.

Non-manual employees and management have performance criteria that include safety performance as a key element of their Annual Reviews. ERC has allocated adequate funds for safety equipment and training.

#### **B. Leadership**

The PresidentS of BHI, CH2M Hill Hanford, Inc., and Eberline Services Hanford, Inc., and other managers at ERC demonstrate management leadership by their commitment to strong S&H policy statements, allocation of resources necessary to support all S&H program activities, attention to employee-identified safety and health concerns, active participation in safety promotional activities, and leadership/mentoring for employee safety team activities. BHI follows the tradition of strong safety culture of its parent company, Bechtel, a company dedicated to the philosophy of "Zero Accident Performance" for 60 years in the United States and at various construction projects throughout world.

ERC has established a hierarchy of committees and teams that provide an opportunity for all employees to be involved in the safety program. Starting with the VPP Leadership Council and

working down through several process and discipline-specific committees, workers and managers cooperate to plan and administer the safety process. The Team suggests that ERC management seek additional support from experienced labor for building a stronger partnership and trust.

### **C. Organization**

ERC is organized by Project Teams (Remedial Action, Waste Operations, Facilities Decommissioning, and Risk Assessment), and by Support Functions (Business Services, Contracts, Procurement, Field Support, Planning and Controls, Technical Services, Safety and Health). The Manager of S&H reports directly to the President of BHI. The S&H department utilizes the expertise of other organizations within the ERC and draws professionals from other departments as needed. The Field Support Function and its Manager play a significant role in the implementation of safety policies and procedures with the help of STRs.

### **D. Responsibility**

The President of BHI has overall operational responsibility as a Chief Executive Officer for ensuring ERC employees comply with safety policies and programs. Top management, especially the Manager of Field Support, the Manager of Technical Services, and the Safety Manager at BHI, are involved in all elements of the VPP program, and they are committed to the implementation of a well-coordinated S&H program, including establishing a clear line of communication with employees. ERC subscribes to the philosophy that line management is responsible for safety.

The ERC has clearly defined the roles, responsibilities, accountabilities, and authorities for conducting business. Managers and employees have been clearly made responsible for safety at all of the ERC facilities located at Hanford. S&H specialists with technical expertise, including a variety of disciplines such as industrial hygiene, fire protection, and radiation protection are available to achieve excellent performance. S&H professionals can be part of the operating teams to ensure that work is performed safely, and these other site-based S&H professionals provide an independent overview of ERC.

### **E. Accountability**

Management is committed to providing the leadership, direction, goals, training, resources, and standards to assist employees in the safe performance of their duties. Management and employees share the responsibility to carry out individual duties in a safe manner. Managers are held accountable for safety by specific criteria within their individual performance standards and are also accountable for the consistent enforcement of company safety policy. There is a formal written performance appraisal system with S&H responsibilities as a critical element for management.

Annual performance reviews are a key method used to hold all non-manual employees, including managers and supervisors, accountable for their performance. The annual performance reviews, which are conducted for all non-manual employees, consider safety and health performance as a major element of the review. Employees have input as to what their specific safety and health expectations are for the rating period. Additionally, the results of these reviews could affect annual merit pay considerations. Management has an established policy allowing disciplinary action(s) for violations of rules, policy and requirements, thereby ensuring accountability on the job. Accountability is regularly communicated to all employees through staff meetings, safety meetings,

training, site publications, and annual performance reviews. All subcontractors are expected to follow these safety and health requirements, and they are held accountable for meeting these requirements, both through formal contractual agreements, and through the implementation of formal policies, procedures, and directions. Failure to comply with these requirements and/or continued non-compliance can result in dismissal from the work site.

## ***F. Authority and Resources***

The President of BHI has the ultimate responsibility for ERC workplace safety with the assistance of full-time professional, technical and administrative employees, and the various safety teams. Adequate resources, including staff, equipment, materials, training and professional expertise have been committed to workplace safety and health.

ERC adopts the ISMS as the primary management system for S&H projects, investments, training, and funding processes. This system of standards-based management places emphasis on safety and health, work site analysis, hazard identification and prevention/control, and management and staff related assessments.

The ability to invoke the use of “stop work authority” has been clearly communicated to the entire staff, along with the understanding that any perceived repercussions would not be tolerated. Likewise, management maintains an “Open Door” policy that is widely used by ERC personnel because managers are typically available and highly responsive to individual employee safety conversations.

Corrective actions on safety findings, issues, and other items, while typically very few, are corrected quickly and tracked until completion. The Team found that safety budgets are adequate.

## ***G. Planning***

The need to build S&H into projects is well ingrained within the ERC safety culture and policies. The annual planning process requires managers to analyze and predict employee training, ES&H, and operational costs for doing business. An institutional safety plan helps capture long-term goals and capital expenditures. An integrated planning framework has been established to provide a comprehensive template to ensure the planning process is comprehensive. The work process at ERC integrates S&H into the work life cycle.

The inclusion of S&H planning by management begins at the operating level. At higher levels, managers are required to plan and outline S&H support as part of their scope of work. Overall, the Team found that the S&H program is goal-driven, with annual review and modification of goals and objectives based on actual performance. Safety and health planning is thorough, and it is designed to ensure continuous improvement.

## ***H. Contract Workers***

The BHI Procurement department conducts a thorough investigation of subcontractor safety records (Experience Modification Rate) for the past three years prior to hiring them. Subcontract workers are

expected to meet the same standards for safety as BHI staff. Subcontractors or their workers who do not meet those standards may be barred from performing work at ERC. No recent examples of this type of action could be found.

The existence of numerous subcontractors at ERC makes this sub-element of VPP an important consideration. The VPP Team noted in their review that because of the complex nature of contractual arrangements, multiple subcontractor layers, and matrix organization, effective communication with all workers becomes difficult. However, with the help of STRs, and the support staff from other Functional Areas/Teams in ERC, and by adopting tools such as Subcontractor Daily Activity Reports, work at ERC is conducted safely. ERC staff oversees its subcontractors at every stage. Failure to comply with S&H rules, regulations, and policy can result dismissal from the site. Subcontractors who repeatedly violate the same rules, policies or standards may be dismissed from the site and prohibited from future work.

All subcontracted work employees must undergo the primary site orientation through Hanford General Employee Training (HGET), as well as activity- and workplace-specific orientation as needed.

## ***I. Program Evaluation***

Annual program evaluations have been conducted using VPP criteria since 2001. Evaluations of the S&H program are conducted with participation by both management and employees. Self-assessments and annual reviews are used as a means for continuous improvements in the S&H program. The Corrective Action Tracking system developed by BHI tracks the actions taken to complete the opportunities identified for improvement by the self-assessments.

The results of annual program evaluations and other S&H trending data are used by ERC to develop goals and objectives for the coming year. Employees conduct the annual evaluations, and the results are formally documented. Every corrective action is then tracked to completion. These self-assessments are candid and detailed. They identify best practices as well as opportunities for improvement.

## ***J. Site Orientation***

All new employees, subcontractors, vendors and visitors are required to complete an initial orientation program conducted by the BHI Human Resources department. This orientation program and other site orientation training given by the Field Safety Organization with the help of HAMTC covers several topics related to Remedial Action Projects, D&D, IH, and Stop Work Authority

## ***K. Employee Notification***

The review team found that the employee notification program at ERC is consistent with the requirements for employee notifications contained in DOE Orders and guidance documents. The "Employee Concerns Program" is committed to the Hanford Site Zero Tolerance for Retaliation Policy.

The President of ERC and other managers have clearly accepted responsibility for the safety of their employees and the operations under their control by establishing ES&H policies. The management of ERC is fully committed to achieving a safe and accident-free work environment.

### ***L. Management Visibility***

ERC top-level management is clearly visible at the work site and actively participates in S&H programs. ERC management regularly participates in various S&H activities and VPP committees. Managers are held accountable for their S&H responsibilities and maintain a policy of accessibility with regard to S&H issues that arise in the workplace. An “open door” policy ensures that any employee at any time can express safety concerns to any level of management. The team confirmed this policy through formal and informal interviews, and noted that most employees did not feel the need to raise concerns above their first-tier or immediate supervisor, because any concerns raised were resolved almost immediately.

### ***M. Conclusion***

The Team found very strong management commitment to safety at ERC and evidence of active involvement of management to achieve the mission and vision of ERC management. ERC meets all the requirements of the Management Leadership tenet and its sub-elements as described above.



## **IV. Employee Involvement**

### ***A. Degree and Manner of Involvement***

The information gathered for evaluation in this tenet relies on observations and interviews of both new and longtime employees of the ERC. Employee involvement and attendance is limited in programs outside of those that are required or mandatory. Additionally, management interpretation of employee involvement differs from that of workers; many workers do not feel they have ownership in the S&H program. The multiple short-term extensions to the ERC contract have been difficult, and have made performing the work in a cost-effective manner quite challenging.

Employee involvement in the POD meetings was very well received; workers were given the opportunity to voice concerns and issues without fear of intimidation. At the completion of the POD, employees are encouraged to participate in a stretching program lead by workers.

The Safety Leadership Council is comprised of both management and bargaining unit members. It is chartered to provide safety leadership for all operations and projects, its charter describes a bargaining unit as chair person and co-chair will be the project safety representative along with a 50/50 voting membership. Observations during the monthly meeting show 36 employees in attendance with the following distribution: 10 members of management (including 2 STRs), 7 Safety Representatives, 9 craft personnel, a secretary, the chair of the non-field safety and health team, the VPP Coordinator, and 7 visitors.

Bargaining unit members of the safety leadership council are asked to participate in accident injury investigations, although there is no formal training provided. All employees interviewed felt the S&H programs have improved over the past 2 years, although not everyone is convinced they see the value or the benefits of VPP.

All employees understand that they have “Stop Work” authority and responsibility. They have no fear of reprisal, although there is some confusion when a stop work is exercised. In some cases, this confusion is due to the number of sub-contractors involved, although the work continues until the stop work order is resolved.

The Task Safety Awareness (TSA) card is a new program that allows workers to evaluate the task, work place, and mark the possible hazards for a hazard control strategy.

Employees interviewed were committed to their work, their company, and the safety of co-workers. They were alert to the hazards and their role and responsibility to safety.

Workers were candid and showed no fear in talking with the VPP review Team during interviews. All employees indicated that they understood their rights and responsibilities, and are very knowledgeable about their responsibilities regarding safety and health. Interviews confirmed that a strong safety culture exists at all levels, and employees feel empowered to voice safety concerns. Workers interviewed (formally and informally) expressed their readiness to stop work if they felt conditions were unsafe, and their belief that management would support the action.

Most employees were familiar with ERC's efforts to continually improve safety programs. They understood that the pursuit of VPP recognition was part of ERC's efforts to sustain ISMS principles. Employees expressed their opinion that this was good business practice and supported the pursuit of VPP. Several employees interviewed were very knowledgeable regarding their rights to request reports of inspections, accident investigation, and injury and illness records. They stated that they were given timely and complete written and/or oral feedback to safety and health questions and issues.

Overall, it was clear that the work force has enthusiastically welcomed the opportunity for increased participation. When asked how the VPP process has impacted their work, most employees interviewed responded that their awareness level has increased; they are analyzing the effectiveness of their present safety systems and recognize how their work may impact the safety of others. Employees indicated that the Company's VPP efforts have kept safety in the forefront. Many workers indicated that the VPP effort has moved the ERC safety programs to a higher level.

### ***B. Recognition Program***

The ERC recognizes the importance of its employees and their contributions for success. A written recognition program is in place that describes the purpose and scope of the program. It recognizes employees at different levels that include monetary awards, vouchers for meals, gift certificates, including gift items and on the spot awards. Employees in the field also described recognition awards given to fellow employees for saving lives.

### ***C. Noteworthy Practices***

- Stretching program each morning with all employees,
- HAMTC safety representative program effectiveness,
- Recognition awards program, and
- Workforce engaged in the POD meetings.

### ***D. Opportunities for Improvement***

- Further empower and encourage workers into sharing ownership of S&H program,
- Further develop and encourage the new safety representative program to enhance employee involvement in the VPP process,
- Continue to develop communications and trust with experienced union leadership by meeting on a routine basis, and
- Provide accident/ injury investigation training to safety leadership council members.

## ***E. Conclusion***

Employees at ERC are proud of their worksite and feel safety is integral to maintaining a world-class construction company such as Bechtel. It is noted that there is a significant amount of worker turnover within the D&D group at ERC due to opportunities with other Hanford Site contractors and pay schedules that are set through collective bargaining agreements. Enhancing the use of experienced workers could be used to further improve a partnership and build trust throughout the ERC Organization. Worker perception is that they are not sure management will share additional ownership under present conditions.



## **V. Worksite Analysis**

The onsite review found that the ERC meets the requirements for worksite analysis found in the DOE-VPP criteria. The sub-elements of the Worksite Analysis program at this site are described below.

The worksite analysis processes at the ERC are structured and implemented to adequately control hazards to the workers, the environment, and the public. Formal worksite analysis processes for control of construction, operations, maintenance and the mitigation of hazards or potential hazards are in place. Personnel interviewed during this review and observations made by the Team confirmed that these processes are used and understood by the workers. Hazard analysis processes incorporate such tools as the Site-Specific HASP system, JHAs, and involve walkthroughs by engineers, health and safety, and subject matter experts deemed necessary to ensure a safe and functional work plan is structured prior to commencing work.

### **A. Comprehensive Surveys**

Each facility or project assigned to the ERC has completed a baseline hazard assessment, primarily in the form of a SSHASP. Employee Job Task Analyses (EJTA) are also conducted to evaluate employees' work hazards and potential exposures, and are reviewed by S&H professionals. The EJTA is renewed and updated periodically or whenever the individual has a change in his/her potential exposures or routine scope of work. Each employee is afforded the opportunity to review and discuss the content of the EJTA with the appropriate manager.

Much of the ERC work involves the decontamination of facilities or waste sites in the 100 and 300 areas for accelerated deactivation that include unknown pre-existing conditions. Teams of specially trained and experienced technical personnel participate in carefully planned and executed surveys to characterize these sites. Craft personnel are routinely involved with these inspections. The SSHASP is one of the outcomes of this survey process.

In addition, there are formal program level assessments that are scheduled and conducted by independent ERC personnel. There are schedules for assessments that meet the requirements for these reviews. Annual VPP self-assessments have also taken place and have provided information that is used as a basis for developing safety improvement plans for the organization.

Risk-based monitoring and personal exposure monitoring also complement the survey program. Shift, daily, monthly, quarterly, and annual radiological surveys/monitoring are also conducted. The Project Superintendent, STR, and Safety and Health personnel all perform routine inspections of work sites.

### **B. Pre-use/Pre-startup Analysis**

Prior to any new project design, or modification of ERC activities, a hazard analysis is completed which documents work processes and identifies requirements and hazards and mitigation methods that will be implemented. S&H and engineering professionals review these documents and provide input. Employees are sometimes involved in pre-start-up analyses and in developing operating protocols for new work activities. Applicable ERC SSHASP's are periodically reviewed and updated as necessary to reflect current conditions. Each ERC work site also uses administrative procedures or JHA to provide site-specific implementation information and requirements.

The Team observed multiple POD meetings during the review. Effective interaction between engineers, crafts, S&H personnel, and supervisors were witnessed during these meetings. Employees confirmed that they are involved in pre-work/startup reviews at a few of the projects, and believe that their involvement is appreciated and contributes significantly to the development of safe work practices. As a result of this involvement at some locations, employees have a greater sense of ownership; thus their level of participation has increased. This involvement could be beneficial if employed at all locations.

### **C. Routine General Hazard Assessments**

S&H professionals, STRs, and line managers are involved in periodic routine self-inspections. In addition, they conduct facility surveillances, operational inspections, and other shift surveillance inspections. Craft employees are included in the routine hazard assessment process. Depending on the type of deficiency discovered and the type of self-inspection, deficiencies are documented using surveillance data sheets, checklists, or logbooks. The majority of issues discovered during these assessments appear to be corrected and resolved very quickly.

Weekly inspections are conducted at the construction and waste site locations. While there is a standard checklist for these inspections, the documentation of these inspections varies from site to site. It was also discovered that not all of the low-risk office facilities are inspected on a quarterly basis as required to meet the VPP criteria.

All work is planned and analyzed before activities begin. The Team verified that work tasks are routinely reviewed to identify hazards and determine safe work practices. This can be accomplished by using a JHA, or by direct inspection, procedure validation walk-downs, and/or safe condition checks. The JHA is used during the work planning process for identifying, evaluating, controlling, and communicating potential hazards and environmental impacts associated with routine, non-routine, and skill-of-the-craft work. Craft employees may not always be involved in all pre-job planning activities, which include the initial assessment of hazards. S&H professionals are routinely included in the process when needed. One strength of the program lies in the fact that anyone may Stop Work if something is not right.

### **D. Employee Reporting of Hazards**

Interviews confirmed that employees are aware of the methods available to report hazards. While there are formal mechanisms for reporting hazards, most employees are comfortable reporting hazards to their immediate supervisors, expecting that hazards will be corrected almost immediately. Most employees feel they can report hazards to any level of ERC management without fear of reprisal.

ERC management promotes open, two-way communication to facilitate resolution of employee S&H issues and concerns. Employees are free to use verbal or written means to report S&H issues. Issues can be brought up in POD or safety meetings, and some project locations also use a safety log as a method of documenting and tracking issues.

The “Stop Work Responsibility” policy establishes employee responsibility and authority to stop work immediately, without fear of reprisal, when a situation exists that places themselves, their coworkers, or the environment in danger. This has been communicated to employees verbally, in formal messages

from the ERC managers, and in routine training for all employees. It is also posted in facilities to remind employees of their rights and responsibility to stop work when they deem it necessary.

Craft personnel routinely report hazards to their supervisors or the safety representative at their site. Some, but not all projects also have a “Safety Log Book” that is available for employees to report S&H issues for corrective actions. It appears corrective actions are normally implemented immediately and may be tracked in POD notes. Issues noted in the safety logbooks are tracked to completion and issue status is reviewed during routine safety meetings. The use of the safety logbooks ensures employee notification of issue status. Employees also understand the formal ERC Employee Concerns program and the DOE Concerns program that is available. The ERC Employee Concerns program was found to be very thorough and well documented. There were 15 formal concerns documented for 2003, with 10 of these being safety/health related.

### ***E. Accident Investigations***

ERC personnel are required and encouraged to promptly report work-related events, including incidents involving property/vehicle damage, accidents involving injuries/illness, and near misses/close calls. Line managers in concert with the S&H representatives determine the extent and type of accident investigation required. At some, but not all projects, employees are requested to participate as part of the team during investigations. This involvement has been directed at some projects by management messages, but is not formalized procedurally. Injury reports reviewed during the review appear to have been effectively investigated.

Lessons learned from incident investigations are routinely shared at the POD meeting for the involved project and sometimes at the POD for other projects. Formal and informal lessons learned from other organizations and sites are provided through the project S&H representatives and/or project management and are shared within the ERC primarily during the POD meetings.

### ***F. Trend Analysis***

S&H performance and trending data are available to management and key elements of this information are routinely provided to employees. ERC S&H staff performs a broad-based, comprehensive trend analysis on a routine basis. Monthly collections and evaluation of twenty categories of ERC performance are used to monitor processes related to hazard reduction. Reports of occurrence trends are also provided formally to DOE. Indicators include project safety rates, types of events, cause trends, and other information. A monthly trend analysis report captures injury and illness information, and is issued to management for discussions at POD and/or safety meetings.

ERC formally trends injuries, illnesses, fire damage, vehicle damage, and corrective action status. There have also been recent enhancements with the formal trending of Occurrence Report information. Trending charts are prepared monthly and provided to management for information and action as necessary. Some of these charts are made available to employees by posting in facility lobby and “break” areas. Such reports are disseminated to provide employee feedback and communicate areas earmarked for improvement.

## **G. Conclusion**

Worksite analysis is an important element of everyday work at ERC. This element is ingrained into the culture and safety/worksite hazard analyses are one of the first considerations for any planned work or operations tasks. The ERC meets the basic requirements for the worksite analysis tenet of VPP.

### **Noteworthy Practices**

- The Site-Specific HASP system was found to be an excellent tool for the hazard analysis process.
- Multiple personnel (Superintendent, STR, and Safety & Health professionals) are all actively involved in various hazard analysis/inspection programs.
- Interviews confirmed that employees are very aware of the various methods available to report hazards.
- The formal ERC Employee Concern program was found to be very thorough and well documented

### **Opportunities for Improvement**

- The documentation of weekly inspections varies from site to site even though there is a standard checklist available.
- Deficiencies noted during routine hazard reviews are not formally tracked to completion or reviewed for trending purposes.
- The use of the “Safety Log Book” is very beneficial, but is not institutionalized at all projects.

## **VI. Hazard Prevention and Control**

The level and complexity of the hazard prevention and control program found at this site meets the DOE-VPP criteria. Sub-elements of this tenet are addressed and described below.

### **A. Professional Expertise**

ERC has a well-qualified group of S&H professionals including Certified Safety Professionals, Associate Safety Professionals, Certified Industrial Hygienists, Registered Radiation Protection Technologists, Certified Health Physicists, Professional Engineer, Certified Professional Ergonomists, Certified Asbestos Supervisors, Certified Hazardous Materials Managers, Certified Electrical Inspectors, Fire Protection Engineers, and other personnel with professional degrees and certifications (BS, MS, PH.D). In addition, some personnel maintain certifications for special tasks, such as Fall Protection Competent Person, Excavation Competent Person, etc.

S&H expertise is provided to support programmatic and field support activities. S&H personnel are matrixed to the specific projects as needed and are well integrated into the work process.

### **B. Safety and Health Rules**

The ERC has strong S&H rules in the hierarchy of policies, procedures, and ISM plans. The ERC team rules for S&H are listed in the ERC Employee Environmental, Safety and Health Practices booklet. The booklet is provided to each employee and made available to each sub-contractor. Hazards of the site are controlled using Engineering controls, Administrative controls, and PPE. Hazard prevention and control is well documented and communicated through the Safety Analysis process, SSHASP, Task Instruction, POD, additional pre-job meetings, and the recently implemented Task Safety Awareness Card. The ERC website delivers a comprehensive set of requirements and processes that provide staff with the standards procedures and guidelines to perform work safely.

Employees use safety and health rules to anticipate work hazards, to reduce hazards and potential exposures, and provide precautionary protection to workers in potentially hazardous situations/conditions. All hazardous work that may require permits (e.g. confined spaces, overhead work, and excavations) is screened for the existence of potential hazards prior to beginning work.

ERC has a strong policy and procedure regarding disciplinary actions. The program is well defined, easily accessible, and communicated to all staff.

### **C. Personal Protective Equipment**

PPE policy is established in procedures and implemented by the SSHASP and/or work documentation. ERC supplies and maintains a variety of PPE to protect workers including gloves, boots, face shields, hard hats, safety glasses and side shields, anti-contamination and protective clothing, hearing protection, and respiratory protection.

There is a well-established infrastructure to ensure that all required PPE is supplied and maintained to meet the needs of workers.

#### ***D. Preventive Maintenance***

The ERC has implemented a comprehensive Preventive Maintenance (PM) program to mitigate the chances and effects of unplanned equipment failure so that it will continue to operate safely and provide appropriate project support. The PM program uses a combination of preventive, predictive and corrective maintenance to ensure the continued availability of equipment, systems, facilities, structures, etc.

#### ***E. Emergency Preparedness***

The ERC has a strong emergency preparedness program. ERC has an emergency management program that prepares the ERC Emergency Response Organization members to respond to an abnormal event/emergency in an efficient and effective manner. The emergency management plan is consistent with Hanford Site requirements and includes the following elements: planning, preparedness, readiness assurance, recovery and response. Fire protection systems, alarms and regular staff training and drills enable prompt and efficient evacuation of facilities and work sites in the event of an emergency.

#### ***F. Radiation Protection Program***

The ERC has a well-defined program that ensures radiation exposure is maintained as low as reasonably achievable (ALARA) for employees, subcontractors and the public. The program has a complement of professional expertise that includes five radiological engineers, seven radiological control supervisors, seventy-five Radiation Control Technicians, and twelve health physics/radiological specialists. The radiological program complies with 10CFR 835 requirements and is implemented through a cooperative effort with the DOE.

#### ***G. Medical Programs***

The ERC medical program is supported by the Hanford Site medical service provider, AdvanceMed Hanford, and is administered through the S&H department. The four main elements of the medical program include; Employee Job Task Analysis (identifies potential hazard exposures for individual employees), occupational medical exams, Hanford occupational health process advisory council and the first aid program. Sub-elements of the program include injury/illness recordkeeping, return to work program, employee assistance program, and health promotion component. Routine site visits by the new occupational medical contractor are being reestablished.

## ***H. Occupational Safety and Health Programs***

ERC policies and procedures are based on appropriate DOE contract clauses, orders, contract requirements and industry standards. ERC-wide procedures are written and maintained by the S&H organization to address worker health and safety requirements. Organizational plans reference applicable procedures and other documents to provide a clear and integrated communication of occupational safety and health programs for managers, staff members and sub-contractors. SSHASPs, JHAs and other documents address the hazards and hazard mitigations for work activities. These documents appropriately translate requirements and best practices into working level guidance. Lessons learned are incorporated into program documentation as appropriate.



## VII. Safety and Health Training

The ERC overall training program includes formal, comprehensive, and documented employee S&H training. ERC procedures direct all aspects of the program, including training evaluation and change control. Formal training includes written and oral examinations, and on-the-job training evaluations to ensure that the trainee acquires the course information. Training courses are reviewed on a periodic basis and revised as necessary to provide the most comprehensive and current training available. Training courses are developed with a systematic approach controlled by procedures.

There are several different methods used to provide ERC employees with formal S&H training. Newly hired ERC employees participate in new employee orientation, which covers specific S&H topics. During orientation, S&H-related handouts are provided and discussed. New employees are also provided a personal copy of the *ERC Employee Environmental, Safety, and Health Practices* handbook. All formal training courses are documented and maintained in individual employee training files, or course roster files. Formal training in S&H is also furnished as part of the HGET course. This course is provided to newly hired employees as part of the Hanford Site orientation package. Subsequently, all employees are required to complete HGET annually. The current version of HGET includes a wide variety of safety, health, and other pertinent topics.

ERC team employees whose job assignments require work with hazardous materials, including radioactive material, must complete hazardous waste worker and/or radiological worker training, and subsequent refresher retraining. Position-specific training requirements are determined by an employee's manager, and are listed on the employee's Training Position Description (TPD). For example, the initial 40-hour hazardous waste worker course addresses in detail the S&H issues pertinent to this work. In addition, the ERC uses the Automated Radiological Access Control System (ARACS) to verify that a worker has all of the qualifications (e.g., Rad Worker training, bioassay, and external dosimetry) required on the applicable Radiological Work Permit (RWP) before gaining access to that work location. The Required Reading program provides additional on-going training. Required Reading is broken into groups; Functional and Site-Specific, or Cross Functional. All Required Reading is completed prior to performing work, or within 60 days after the procedure/document is assigned to an employee. Required Reading can also be identified for training. The type of training is determined and either informal briefing or required readings are performed and documented. Required Reading can also be tied to a TPD to ensure the consistency of Required Reading in that position. Required reading is tracked in the Training Database, and a delinquency report is generated for employees that do not complete their required reading within the required time period.

Less-structured S&H training is provided to ERC team employees through weekly *Safely Speaking* newsletters. These newsletters are used organization-wide to present S&H information, including current injury/illness data, to employees during staff and safety meetings. Each *Safely Speaking* includes a signature sheet to document participation. As employees are assigned to perform new work, additional training may be required for an employee to ensure proper qualification to perform all work in a safe and efficient manner. Participation in pre-job briefings and plan-of-the-day meetings are mandatory for all employees working on a project, and a signature sheet in the work package documents employee-applicable topics and training associated with the work package. Subject-specific procedures are also assigned to employees as required reading and are part of an employee's identified training. BHI-HR-02, Procedure 1.1, "ERC Training Program Procedure," provides direction to the ERC training program.

Training courses are evaluated and updated as necessary. Evaluations and updates are driven by procedures, DOE orders, regulatory requirements, state laws, CFRs and OSHA, etc. For radiological worker training, the RadCon Manager is responsible for reviewing program changes, and initiating training course updates/revisions when changes are determined to be significant. Continuous improvement is always a goal of training.

Training course completion records are entered into the ERC Training Records Information System (TRIS) database. TRIS is used to keep track of all classes attended by ERC employees. A complete list of ERC courses is contained within TRIS. Once records are updated in TRIS, an ERC employee receives an ERC Basic Training Data card from the Training Department. The list of classes included on the card is based on input from management, project safety representatives, project leads, security, and other organizations and are determined by access and work activity requirements for each individual employee.

Most courses involving radiological, heavy equipment, instruments, etc., are evaluated to ensure that employees understand course information. When applicable, employees are evaluated before and after the training through on-the-job or classroom training. Testing performed may include the following, and can be provided by oral or written examinations:

- Pre-tests – performed to determine entry qualifications
- Progress tests – performed to evaluate trainee performance and determine the need for additional assistance
- Post-tests – performed to measure trainees' satisfactory completion of training.

Once these tests are performed, the training standard is established for evaluating trainee performance.

**Appendix: DOE-VPP Onsite Review Team**

**DOE-VPP Review Team Assignments  
Environmental Restoration Contractor  
Richland, WA  
June 21-24, 2004**

<b>Name</b>	<b>Organization</b>	<b>Areas of Responsibility</b>
Rama Sastry	Team Leader EH-31, DOE-HQ	Management Leadership Safety & Health Training
Rex Bowser	EH-31, DOE-HQ	Management Leadership Employee Involvement
John Cavanaugh	DOE-RL	Safety & Health Training Management Leadership
David Mahlum	OSHA/DOL	Hazard Prevention & Control
Drue Collins	PNNL, Richland	Hazard Prevention & Control
Rich Layman	FHI, Richland	Employee Involvement
Jack Griffith	FHI, Richland	Employee Involvement
Rich Kobelski	FHI, Richland	Work Site Analysis

